



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/551,958

10/06/2005

Hidekazu Michioka

043151

6143

38834

7590

09/04/2008

WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP

1250 CONNECTICUT AVENUE, NW

SUITE 700

WASHINGTON, DC 20036

EXAMINER

PILKINGTON, JAMES

ART UNIT

PAPER NUMBER

3682

MAIL DATE

DELIVERY MODE

09/04/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/551,958

**Applicant(s)**

MICHIOKA ET AL.

**Examiner**

JAMES PILKINGTON

**Art Unit**

3682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date 10/6/05
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Objections***

1. Claims 6 and 7 are objected to because of the following informalities:
  - Claim 6 line 3, "a plurality of rollers" should be - - the plurality of rollers- -
  - Claim 7 line 2, "is hypoid gears" should be - - is a hypoid gear- -

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Clm 3 recites "a center of a gear abutting surface" but does not provide a frame of reference for the center. Is the center in respect to axial or longitudinal direction?

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 1, 2, 3 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Sague, USP 5,104,239.

Sague discloses a geared cross roller bearing comprising:

- an outer ring (18)
- an inner ring (12) relatively rotatable with respect to the outer ring (18)
- a plurality of rollers (24 and 26) accommodated in a roller circulation passage (14 and 16) formed between an outer ring side roller rolling groove formed to the outer ring and an inner ring side roller rolling groove formed to the inner ring so that rotational axes of the rollers intersect to each other (see figures 3 and 4)
- wherein a gear (48) is formed integrally with either one of the outer (18) and inner (12) rings
- wherein a plurality of roller circulation passages are formed in the axial direction of the outer ring or inner ring (Figure 1 shows 2 stacked in the axial direction)
- wherein a center of a gear abutting surface of the gear (48) formed to the outer periphery of the outer ring (18) and a center, in the axial direction, of two roller circulation passages accord with each other in the axial direction (they are in the same device and therefore accord with each other)
- wherein another one of the inner ring (12) and the outer ring (18) is formed with an accommodation hole (50) for accommodating the plurality of rollers (24/26) into the roller circulation passage (14) so as to penetrate in the radial direction of the another one of the inner and outer ring (see

Figure 2)

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sague '239 in view of Asberg, USP 3,792,625.

Re clm 4, Sague discloses all of the limitations as discussed above.

Sague does not disclose that said inner ring has a protruded portion protruded over the outer ring in the axial direction and the gear is formed to the outer periphery of the protruded portion.

Asberg teaches an arrangement wherein the inner ring (24) has a protruded portion (at 19) over the outer ring (25) in the axial direction and the gear (19) is formed on the outer periphery of the protruded portion for the purpose of providing a shaft, bearing and gearing arrangement which is shorter in the axial direction (C4/L16-38) which permits for reduction of size of an over all device.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Sague and provide the inner ring with a protruded portion over the outer ring in the axial direction and the gear being formed on the outer periphery of the protruded portion, as taught by Asberg, for the purpose of providing a

shaft, bearing and gearing arrangement which is shorter in the axial direction which permits for reduction of size of an over all device.

Re clm 5, Sague discloses all of the limitations as discussed above.

Sague does not disclose that said outer ring is composed of a first outer ring section formed with a first outer ring side roller rolling portion and a second outer ring section formed with a second outer ring side roller rolling portion, said inner ring is formed with a first inner ring side roller rolling portion opposing to the first outer ring side roller rolling portion and a second inner ring side roller rolling portion opposing to the second outer ring side roller rolling portion, and said gear formed to the outer peripheral portion of the inner ring is arranged between the first inner ring side roller rolling portion and the second inner ring side roller rolling portion.

Asberg teaches an arrangement wherein outer ring (50/51) is composed of a first outer ring section (50) formed with a first outer ring side roller rolling portion and a second outer ring section (51) formed with a second outer ring side roller rolling portion, the inner ring (48/49) is formed with a first inner ring side roller rolling portion (48) opposing to the first outer ring side roller rolling portion (50) and a second inner ring side roller rolling portion (49) opposing to the second outer ring side roller rolling portion (51), and the gear (see Figure 4) formed to the outer peripheral portion of the inner ring (48/49) is arranged between the first inner ring side roller rolling portion (48) and the second inner ring side roller rolling portion (49).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Sague and provide the inner and outer ring and gear arrangement of Figure 4 of Asberg, since substituting one known gear and bearing arrangement for another would yield the predictable result of removing vibrations by supporting both ends of the gear/gear shaft.

8. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sague '239 in view of Watanabe, US PGPub 2003/0126942.

Re clms 7 and 8, Sague discloses all of the claimed subject matter as disclosed above.

Sague does not disclose that the gear is hypoid gear to transmit between shafts that are not parallel or intersecting and a table device comprising a bed and a turn table.

Watanabe teaches a hypoid gear set (45) to transmit between shafts that are not parallel or intersecting (32 and 35) for the purpose of increasing transmission efficiency (paragraph 007) which is used in a table device comprising a bed (12) and a turn table (11).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Sague and provide a hypoid gear set to transmit motion, as taught by Watanabe, for the purpose of increasing transmission efficiency. One of ordinary skill in the art would also employ the device of Sague in a table device comprising a bed and a turn table as shown in Watanabe.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Pilkington whose telephone number is 571-272-5052. The examiner can normally be reached Monday-Friday from 7AM-3PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached at 571-272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. P./  
Examiner, Art Unit 3682  
7-28-08

/Richard WL Ridley/  
Supervisory Patent Examiner, Art Unit 3682



